



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,848	12/19/2006	Shigemasa Takagi	2000-29	3073
86902	7590	04/12/2011		
J. Rodman Steele, Jr. Novak Druce & Quigg LLP 525 Okeechobee Blvd Suite 1500 West Palm Beach, FL 33401			EXAMINER	
			LIU, HENRY Y	
			ART UNIT	PAPER NUMBER
			3654	
			MAIL DATE	DELIVERY MODE
			04/12/2011	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/569,848

**Applicant(s)**

TAKAGI ET AL

**Examiner**

HENRY LIU

**Art Unit**

3654

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/22/2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 13-18, 20, 23, 24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) 1-10, 14, 20, 23, 24, and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13 and 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/2010 has been entered.

**DETAILED ACTION**

Claims 1-10, 13-18, 20, 23, 24, and 26 are pending. Claims 1-10, 14, 20, 23, 24, and 26 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/6/2009.

A rejection to Claims 13 and 15-18 is set forth below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over YOSHIDA (6,270,437) in view of MIURA (2003/0162616).

Regarding Claim 13, YOSHIDA teaches "a push block (32) for use with a metallic belt wound between annular V-grooves of a drive pulley (6) and a driven pulley (11)."

YOSHIDA teaches "a plurality of the push blocks (32) are for being superimposed with one another along the longitudinal direction of the metallic belt (15), the push block (32) comprising: a front surface located at a front side of the push block in a travel direction of the push block and a rear surface located at a rear side of the push block in the travel direction; a side contact surface (37) opposing inner side surfaces of the annular V-grooves of both pulleys (6) (11), the side contact surface extending between the front and rear contact surfaces the side contact surface having an associated lengthwise direction and an associated widthwise direction is generally parallel to a travel direction of the push block (32)."

YOSHIDA does not teach "and a front half of the contact surface forming an obtuse angle with a front surface of the push block, and a rear half of the contact surface forming an obtuse angle with a rear surface of the push block, and a ridge line comprising a line formed by an intersection of said front half and said rear half, said ridge line functioning as an oil film breaking portion for breaking an oil film, which forms on the inner side surfaces of the annular V-grooves of the pulleys (Fig. 26), and extending along the entire length of the

contact surface in substantially the lengthwise direction and at a middle part of the contact surface in the widthwise direction.”

MIURA teaches a front half of the contact surface (105b) forming an obtuse angle with a front surface (100f) of the push block, and a rear half of the contact surface (105b) forming an obtuse angle with a rear surface (100r) of the push block (100), and a ridge line (contact surface at Cr) (Fig. 3a) comprising a line formed (when the 105b and curve Cr meet, a line is formed) by an intersection of said front half and said rear half, said ridge line functioning as an oil film breaking portion for breaking an oil film, which forms on the inner side surfaces of the annular V-grooves of the pulleys, and extending along the entire length of the contact surface in substantially the lengthwise direction and at a middle part of the contact surface in the widthwise direction.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in YOSHIDA with the contact surface angles of MIURA for improved grip between the push blocks and the pulleys.

YOSHIDA does not teach “a push block is formed by bending a single wire material and then performing pressing.” Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. Bending and pressing or another method would result in the same structure of the product MPEP 2113.

YOSHIDA does not teach wherein the metallic belt has a metal endless band having at least one layer and having a plurality of metal push blocks engaged and superimposed with one another on the band.

MIURA teaches a metallic belt with a metal endless band (10) having at least one layer and having a plurality of metal push blocks (100) engaged and superimposed with one another on the band (10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in YOSHIDA with the metal endless band in MIURA to create a more lightweight belt.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over IVEY (4,386,922) in view of MIURA (2003/0162616).

Regarding Claim 15, IVEY teaches "a push block (30) (Fig. 7) for use with a metallic belt wound between annular V-grooves of a drive pulley and a driven pulley, wherein a plurality of the push blocks are for being superimposed with one another along the longitudinal direction of the metallic belt (see Fig. 2), the push block (30) comprising: a front surface and a rear surface; a side contact surface (36) opposing inner side surfaces of the annular V-grooves of both pulleys, the side contact surface extending between the front and rear contact surfaces, the side contact surface having an associated lengthwise direction and an associated widthwise direction that is transverse to the lengthwise direction,

Art Unit: 3654

whereby the widthwise direction is generally parallel to a travel direction of the push block (36) (Fig. 3)."

IVEY teaches "a front portion of the contact surface forming an obtuse angle with a front surface of the push block (30), and a groove (space where block B is) extending along the entire length of the contact surface at the middle of the contact surface (36), wherein an inner wall of the groove and the contact surface defines the ridge line that functions as the oil film breaking portion, which forms on the inner side surfaces of the annular V-grooves of the pulleys (see Fig. 2),

IVEY does not teach "a push block is formed by bending a single wire material and then performing pressing." Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. Bending and pressing or another method would result in the same structure of the product or an obvious difference, see MPEP 2113.

IVEY does not teach "and a front half of the contact surface forming an obtuse angle with a front surface of the push block, and a rear half of the contact surface forming an obtuse angle with a rear surface of the push block, and a ridge line comprising a line formed by an intersection of said front half and said rear half, said ridge line functioning as an oil film breaking portion for breaking an oil film, which forms on the inner side surfaces of the annular V-grooves of the pulleys (Fig. 26), and extending along the entire length of the contact surface in

Art Unit: 3654

substantially the lengthwise direction and at a middle part of the contact surface in the widthwise direction.”

MIURA teaches a front half of the contact surface (105b) forming an obtuse angle with a front surface (100f) of the push block, and a rear half of the contact surface (105b) forming an obtuse angle with a rear surface (100r) of the push block (100), and a ridge line (contact surface at Cr) (Fig. 3a) comprising a line formed (when the 105b and curve Cr meet, a line is formed) by an intersection of said front half and said rear half, said ridge line functioning as an oil film breaking portion for breaking an oil film, which forms on the inner side surfaces of the annular V-grooves of the pulleys, and extending along the entire length of the contact surface in substantially the lengthwise direction and at a middle part of the contact surface in the widthwise direction.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in IVEY with the contact surface angles of MIURA for improved grip between the push blocks and the pulleys..

IVEY does not teach wherein the metallic belt has a metal endless band having at least one layer and having a plurality of metal push blocks engaged and superimposed with one another on the band.

MIURA teaches a metallic belt with a metal endless band (10) having at least one layer and having a plurality of metal push blocks (100) engaged and superimposed with one another on the band (10).



Art Unit: 3654

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in IVEY with the metal endless band in MIURA to create a more lightweight belt.

**As per claim 16**, IVEY as modified teaches wherein the groove (surface at block B) has a rectangular cross section (Fig. 2).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over IVEY (4,386,922) in view of MIURA (2003/0162616) and further in view of SUGIMOTO (4,718,881).

**As per claim 17**, IVEY as modified does not teach wherein the groove has a triangular cross section.

SUGIMOTO teaches a groove with a triangular cross section. The cross section of the groove inside (3) is triangular.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in IVEY with the triangular groove cross section in MIURA to create a push block contact surface which has a longer wearing life.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over IVEY (4,386,922) in view of MIURA (2003/0162616) and further in view of BRANDSMA (6,086,499).

**As per claim 18**, IVEY as modified does not teach the side contact surface includes a plurality of grooves extending parallel to the travel direction of the push block, with the width of the groove at the front side in the travel direction being wider than the width at the rear side in the travel direction.

BRANDSMA teaches grooves (16) extending parallel to the travel direction of the push block (6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in IVEY with the grooves in BRANDSMA to create a push block contact surface which has a smaller contact area for more grip.

### ***Response to Arguments***

Applicant's arguments with respect to claims 13 and 15-18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY LIU whose telephone number is

Art Unit: 3654

(571) 270-7018. The examiner can normally be reached on Mon-Thurs 7:30am - 5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MICHAEL MANSEN can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/  
Supervisory Patent Examiner, Art Unit 3654

/H. L./  
Examiner, Art Unit 3654